Amendments to the Drawings

Applicant has amended Fig. 2B. A Replacement Sheet is attached.

REMARKS

Claims 1-14 and 16-20 are pending. Claims 1, 11, 12, 14, 16, and 17 have been amended. Claim 15 has been canceled. New claims 18-20 have been added. Claims 11 and 12 were indicated as allowable and have been rewritten in independent form.

Objection to the Drawings

Applicant has amended Fig. 2B. A Replacement Sheet is attached.

Objection to the Claims

The informalities identified by the Examiner have been addressed.

Rejections under 35 U.S.C. § 103

Claims 1-10 and 14-17 stand rejected under 35 U.S.C. § 103 as being unpatentable over various combinations of U.S. Patent No. 6,611,551 to Jones, IV et al. ("Jones"), U.S. Patent No. 6,559,994 to Chen et al. ("Chen"), and U.S. Patent No. 6,249,543 to Chow ("Chow"). As provided in MPEP § 2143, "[t]o establish a prima facie case of obviousness, ... the prior art reference (or references when combined) must teach or suggest all the claim limitations." Furthermore, under MPEP § 2142, "[i]f the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness." It is submitted that the Office action does not factually support a prima facie case of obviousness based on the cited references for the following reasons.

Claims 1-10

Claim 1, as amended, recites in part preparing the input signal to be less susceptible to errors caused by atmospheric variances during transmission through the atmosphere by performing an inverse fast Fourier transform on the two or more portions to create an orthogonal representation of the input signal, and modulating at least one laser diode, using the orthogonal

representation, such that modulated data can be transmitted on an atmospheric optical carrier between the first station and the second station.

Applicant submits that the cited combination of references fails to teach or suggest at least the above recited elements of claim 1. More specifically, while Jones discloses optical fiber (col. 3, line 53), Jones fails to teach or suggest preparing the input signal to be less susceptible to errors caused by atmospheric variances during transmission through the atmosphere by performing an inverse fast Fourier transform on the two or more portions to create an orthogonal representation of the input signal, and modulating at least one laser diode, using the orthogonal representation, such that modulated data can be transmitted on an atmospheric optical carrier between the first station and the second station.

Furthermore, the obstacles faced in transmitting via the atmosphere, as described for example at page 3, lines 4-14, of Applicant's specification, are different from those faced when transmitting via an optical fiber as disclosed by Jones. Accordingly, the simple disclosure of an optical fiber by Jones fails to teach or suggest the use of an atmospheric optical carrier as recited in claim 1. The Chow and Chen references fail to remedy the deficiencies of Jones. Accordingly, the cited combination of references fails to teach or suggest each element of claim 1 as required by MPEP § 2143, and claim 1 is allowable over the cited art. Claims 2-10 depend from and further limit claim 1 and are allowable for at least the same reason as claim 1.

Claim 14

Claim 14, as amended, recites in part receiving an optical input signal containing the data from an atmospheric optical carrier, and multiplexing the two or more portions to extract the data, wherein the multiplexing includes extracting a channel quality estimate that accounts for atmospheric variances affecting the atmospheric optical carrier.

As described above with respect to claim 1, the cited combination of references fails to teach or suggest an atmospheric optical carrier. In addition, the cited combination of references fails to teach or suggest extracting a channel quality estimate that accounts for atmospheric variances affecting the atmospheric optical carrier. The Office action relies on Fig. 1 of Jones to

render obvious claim 15 (which contained language on obtaining a channel quality estimate), but Fig. 1 of Jones fails to teach or suggest obtaining a channel quality estimate that accounts for atmospheric variances, and also fails to teach or suggest how such an estimate may be obtained.

Accordingly, the cited combination of references fails to teach or suggest each element of claim 14 as required by MPEP § 2143, and claim 14 is allowable over the cited art.

Claims 16 and 17

Claim 16, as amended, recites in part receiving an optical input signal containing the data from an atmospheric optical carrier, and detecting errors in the two or more portions caused by atmospheric variances affecting the atmospheric optical carrier.

As described above with respect to claim 1, the cited combination of references fails to teach or suggest an atmospheric optical carrier. In addition, the cited combination of references fails to teach or suggest detecting errors in two or more portions of a signal caused by atmospheric variances affecting the atmospheric optical carrier.

Accordingly, the cited combination of references fails to teach or suggest each element of claim 16 as required by MPEP § 2143, and claim 16 is allowable over the cited art. Claim 17 depends from and further limit claim 16 and is allowable for at least the same reason as claim 16.

New claims

Claim 18

New claim 18 depends from and further limits claim 1 and is allowable for at least the reasons discussed above with respect to claim 1. Furthermore, claim 18 recites providing "spatial diversity in the transmission of the modulated data between the first station and the second station," which is neither taught nor suggested by the cited combination of references. Accordingly, claim 18 is also allowable for at least this independent reason.

Claims 19 and 20

Claim 19 recites a system for transmitting data using line-of-sight optical carriers, the system comprising: a first station having at least first and second laser diodes, wherein the first station includes: means for receiving an input signal representing the data, means for demultiplexing the input signal into two or more portions, means for preparing the input signal for transmission through the atmosphere, wherein the means for preparing includes means for performing an inverse fast Fourier transform on the two or more portions to create an orthogonal representation of the input signal, and means for modulating the at least first and second laser diodes, using the orthogonal representation, such that modulated data is transmitted using spatial diversity on the optical carriers between the first station and the second station, and a second station having at least a receiver, wherein the second station is linked to the first station via at least the optical carriers, and wherein the second station is configured to receive the modulated data transmitted by the first station via the optical carriers.

The cited combination of references fails to teach or suggest each element of claim 19 as required by MPEP § 2143. For example, the cited combination of references fails to teach or suggest line-of-sight optical carriers, as well as the transmission of data using spatial diversity. Accordingly, claim 19 is allowable over the cited art. Claim 20 depends from and further limits claim 19 and is allowable for at least the same reason as claim 19.

Conclusion

It is respectfully submitted that all the claims in the application are in condition for allowance. Should the Examiner deem that any further amendment is needed to place this application in condition for allowance, the Examiner is invited to telephone the undersigned at the below listed telephone number.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on August 24, 2005.

Gayle Conner